A systematic review of evidence on malignant spinal metastases: natural history and technologies for identifying patients at high risk of vertebral fracture and spinal cord compression

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Record Status
This is a bibliographic record of a published health technology assessment from a member of INAHTA. No evaluation of the quality of this assessment has been made for the HTA database.

Citation

Authors' objectives
To undertake a systematic review to examine the natural history of metastatic spinal lesions and to identify patients at high risk of vertebral fracture and SCC.

Authors' conclusions
No studies were found which examined natural history. Overall burden of metastatic disease, confirmed metastatic bone involvement and immediate symptomatology suggestive of spinal column involvement are already well known as factors for metastatic SCC, vertebral collapse or progression of vertebral collapse. Although we identified a large number of additional possible prognostic factors, those which currently offer the most potential are unclear. Current clinical consensus favours magnetic resonance imaging and CT imaging modalities for the investigation of SCC and vertebral fracture. Future research should concentrate on: (1) prospective randomised designs to establish clinical and quality-of-life outcomes and cost-effectiveness of identification and treatment of patients at high risk of vertebral collapse and SCC; (2) Service Delivery and Organisation research on magnetic resonance imaging (MRI) scans and scanning (in tandem with research studies on use of MRI to monitor progression) in order to understand best methods for maximising use of MRI scanners; and (3) investigation of prognostic algorithms to calculate probability of a specified event using high-quality prospective studies, involving defined populations, randomly selected and clearly identified samples, and with blinding of investigators.

Final publication URL
http://www.journalslibrary.nihr.ac.uk/hta/hta17420/#/abstract

Additional data URL
http://www.journalslibrary.nihr.ac.uk/hta/volume-17/issue-42

Indexing Status
Subject indexing assigned by CRD

MeSH
Humans; Neoplasm Metastasis; Spinal Neoplasms

Language Published
English

Country of organisation
England

English summary
An English language summary is available.
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AccessionNumber
32011001129

Date abstract record published
28/09/2011